

WHAT IS CLAIMED IS:

1. A semiconductor device comprising:

a first n-channel TFT provided over a substrate;
a second n-channel TFT provided over said substrate;
a p-channel TFT over said substrate;
a first impurity region and a second impurity region provided in a semiconductor layer of the first n-channel TFT and provided outside a gate electrode;

a third impurity region provided in a semiconductor layer of the second n-channel TFT and provided so as to be partially overlapped with a gate electrode, the third impurity region provided outside the gate electrode;

a fourth impurity region provided in a semiconductor layer of the p-channel TFT and provided so as to be partially overlapped with a gate electrode; and

a fifth impurity region provided in the semiconductor layer of the p-channel TFT and provided over a substrate outside a gate electrode.

2. A device according to claim 1, wherein the second n-channel TFT is provided in a buffer circuit.

3. A semiconductor device comprising:

a first n-channel TFT provided over a substrate;

a second n-channel TFT provided over said substrate;
 a p-channel TFT provided over said substrate;
 a first impurity region that is provided in a semiconductor layer of the first n-channel TFT and is to be an LDD region;
 a second impurity region of a source/drain region provided in the semiconductor layer of the first n-channel TFT outside a gate electrode;
 a third impurity region that is provided in a semiconductor layer of the second n-channel TFT and is to be an LDD region, said third impurity region is provided so as to be partially overlapped with a gate electrode, and the third impurity region to be a source/drain region is provided outside the gate electrode;
 a fourth impurity region that is formed in a semiconductor layer of the p-channel TFT and is to be an LDD region, said fourth impurity region provided so as to be partially overlapped with a gate electrode; and
 a fifth impurity region of a source/drain region provided in the semiconductor layer of the p-channel TFT outside a gate electrode.

4. A device according to claim 3, wherein the second n-channel TFT is provided in a buffer circuit.

5. A semiconductor device comprising:

a first n-channel TFT provided over a substrate and in a pixel

portion;

a second n-channel TFT provided over said substrate and in a driving circuit;

a p-channel TFT provided over said substrate in said driving circuit;

a first impurity region and a second impurity region provided in a semiconductor layer of the first n-channel TFT and provided outside a gate electrode;

a third impurity region provided in a semiconductor layer of the second n-channel TFT and provided so as to be partially overlapped with a gate electrode, and the third impurity region provided outside the gate electrode;

a fourth impurity region provided in a semiconductor layer of the p-channel TFT and provided so as to be partially overlapped with a gate electrode; and

a fifth impurity region provided in the semiconductor layer of the p-channel TFT outside a gate electrode.

6. A device according to claim 5, wherein the second n-channel TFT is provided in a buffer circuit.

7. A semiconductor device comprising:

a first n-channel TFT provided over a substrate in a pixel portion;

a second n-channel TFT provided over said substrate in a driving circuit;

a p-channel TFT provided over said substrate in said driving circuit;

a first impurity region that is provided in a semiconductor layer of the first n-channel TFT and is to be an LDD region;

a second impurity region of a source/drain region provided outside a gate electrode and in the semiconductor layer of the first n-channel TFT;

a third impurity region that is provided in a semiconductor layer of the second n-channel TFT and is to be an LDD region, said third impurity region provided so as to be partially overlapped with a gate electrode, the third impurity region of a source/drain region provided outside the gate electrode, and

a fourth impurity region that is provided in a semiconductor layer of the p-channel TFT and is to be an LDD region, said fourth impurity region provided so as to be partially overlapped with a gate electrode, and

a fifth impurity region of a source/drain region provided outside a gate electrode.

8. A device according to claim 7, wherein the second n-channel TFT is provided in a buffer circuit.

9. A device according to claim 1 wherein said semiconductor device is a personal computer.
10. A device according to claim 1 wherein said semiconductor device is a video camera.
11. A device according to claim 1 wherein said semiconductor device is a mobile computer.
12. A device according to claim 1 wherein said semiconductor device is a goggle type display.
13. A device according to claim 1 wherein said semiconductor device is a player using a record medium.
14. A device according to claim 1 wherein said semiconductor device is a digital camera.
15. A device according to claim 1 wherein said semiconductor device is a front type projector.
16. A device according to claim 1 wherein said semiconductor device is a rear type projector.

17. A device according to claim 1 wherein said semiconductor device is a portable telephone.

18. A device according to claim 1 wherein said semiconductor device is an electronic book.

19. A device according to claim 3 wherein said semiconductor device is a personal computer.

20. A device according to claim 3 wherein said semiconductor device is a video camera.

21. A device according to claim 3 wherein said semiconductor device is a mobile computer.

22. A device according to claim 3 wherein said semiconductor device is a goggle type display.

23. A device according to claim 3 wherein said semiconductor device is a player using a record medium.

24. A device according to claim 3 wherein said semiconductor device is a digital camera.

25. A device according to claim 3 wherein said semiconductor device is a front type projector.
26. A device according to claim 3 wherein said semiconductor device is a rear type projector.
27. A device according to claim 3 wherein said semiconductor device is a portable telephone.
28. A device according to claim 3 wherein said semiconductor device is an electronic book.
29. A device according to claim 5 wherein said semiconductor device is a personal computer.
30. A device according to claim 5 wherein said semiconductor device is a video camera.
31. A device according to claim 5 wherein said semiconductor device is a mobile computer.
32. A device according to claim 5 wherein said semiconductor device is a goggle type display.

33. A device according to claim 5 wherein said semiconductor device is a player using a record medium.

34. A device according to claim 5 wherein said semiconductor device is a digital camera.

35. A device according to claim 5 wherein said semiconductor device is a front type projector.

36. A device according to claim 5 wherein said semiconductor device is a rear type projector.

37. A device according to claim 5 wherein said semiconductor device is a portable telephone.

38. A device according to claim 5 wherein said semiconductor device is an electronic book.

39. A device according to claim 7 wherein said semiconductor device is a personal computer.

40. A device according to claim 7 wherein said semiconductor device is a video camera.

41. A device according to claim 7 wherein said semiconductor device is a mobile computer.

42. A device according to claim 7 wherein said semiconductor device is a goggle type display.

43. A device according to claim 7 wherein said semiconductor device is a player using a record medium.

44. A device according to claim 7 wherein said semiconductor device is a digital camera.

45. A device according to claim 7 wherein said semiconductor device is a front type projector.

46. A device according to claim 7 wherein said semiconductor device is a rear type projector.

47. A device according to claim 7 wherein said semiconductor device is a portable telephone.

48. A device according to claim 7 wherein said semiconductor device is an electronic book.

49. A method of manufacturing a semiconductor device, comprising the steps of:

forming an amorphous semiconductor film comprising silicon as a main component over an insulating surface;

adding a catalytic element for promoting crystallization to the amorphous semiconductor film,

conducting a first heat treatment after said adding of said catalytic element, to form a crystalline semiconductor film;

forming a barrier layer over the crystalline semiconductor film;

forming a semiconductor film containing a rare gas element in a concentration of $1 \times 10^{19}/\text{cm}^3$ to $1 \times 10^{22}/\text{cm}^3$ over the barrier layer;

moving the catalytic element to the semiconductor film containing the rare gas element by a second heat treatment; and

removing the semiconductor film containing the rare gas element.

50. A method according to claim 49, wherein the barrier layer is a chemical oxide film formed by ozone water.

51. A method according to claim 49, wherein the barrier layer is formed by oxidizing a surface of the amorphous semiconductor film by a plasma treatment.

52. A method according to claim 49, wherein the barrier layer is formed by irradiating UV-rays in an atmosphere containing oxygen to generate ozone, thereby oxidizing a surface of the amorphous semiconductor film.

53. A method according to claim 49, wherein the barrier layer is a porous film formed with a film thickness of 1 to 10 nm.

54. A method according to claim 49, wherein the rare gas element is one kind or a plurality of kinds of elements selected from the group consisting of He, Ne, Ar, Kr, and Xe.

55. A method according to claim 49, wherein the first heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

56. A method according to claim 49, wherein the first heat treatment is conducted by using an electrothermal furnace.

57. A method according to claim 49, wherein the second heat treatment is conducted by radiation from one kind or a plurality of kinds

of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

58. A method according to claim 49, wherein the second heat treatment is conducted by using an electrothermal furnace.

59. A method according to claim 49, wherein the catalytic element is one kind or a plurality of kinds of elements selected from the group consisting of Fe, Ni, Co, Ru, Rh, Pd, Os, Ir, Pt, Cu, and Au.

60. A method of manufacturing a semiconductor device, comprising the steps of:

forming an amorphous semiconductor film comprising silicon as a main component over an insulating surface;

adding a catalytic element for promoting crystallization to the amorphous semiconductor film to form a crystalline semiconductor film by a first heat treatment;

irradiating the crystalline semiconductor film with laser light;

forming a barrier layer over the crystalline semiconductor film;

forming a semiconductor film containing a rare gas element

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in a concentration of $1 \times 10^{19}/\text{cm}^3$ to $1 \times 10^{22}/\text{cm}^3$ over the barrier layer;

moving the catalytic element to the semiconductor film containing the rare gas element by a second heat treatment; and

removing the semiconductor film containing the rare gas element.

61. A method according to claim 60, wherein the barrier layer is a chemical oxide film formed by ozone water.

62. A method according to claim 60, wherein the barrier layer is formed by oxidizing a surface of the amorphous semiconductor film by a plasma treatment.

63. A method according to claim 60, wherein the barrier layer is formed by irradiating UV-rays in an atmosphere containing oxygen to generate ozone, thereby oxidizing a surface of the amorphous semiconductor film.

64. A method according to claim 60, wherein the barrier layer is a porous film formed with a film thickness of 1 to 10 nm.

65. A method according to claim 60, wherein the rare gas element is one kind or a plurality of kinds of elements selected from the

group consisting of He, Ne, Ar, Kr, and Xe.

66. A method according to claim 60, wherein the first heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

67. A method according to claim 60, wherein the first heat treatment is conducted by using an electrothermal furnace.

68. A method according to claim 60, wherein the second heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

69. A method according to claim 60, wherein the second heat treatment is conducted by using an electrothermal furnace.

70. A method according to claim 60, wherein the catalytic element is one kind or a plurality of kinds of elements selected from the group consisting of Fe, Ni, Co, Ru, Rh, Pd, Os, Ir, Pt, Cu, and Au.

71. A method of manufacturing a semiconductor device, comprising the steps of:

forming an amorphous semiconductor film comprising silicon as a main component over an insulating surface;

adding a catalytic element for promoting crystallization to the amorphous semiconductor film to form a crystalline semiconductor film by a first heat treatment;

forming a barrier layer over the crystalline semiconductor film;

forming a semiconductor film containing a rare gas element in a concentration of $1 \times 10^{19}/\text{cm}^3$ to $1 \times 10^{22}/\text{cm}^3$ over the barrier layer;

moving the catalytic element to the semiconductor film containing the rare gas element by a second heat treatment;

removing the semiconductor film containing the rare gas element; and

irradiating the crystalline semiconductor film with laser light.

72. A method according to claim 71, wherein the barrier layer is a chemical oxide film formed by ozone water.

73. A method according to claim 71, wherein the barrier layer is

formed by oxidizing a surface of the amorphous semiconductor film by a plasma treatment.

74. A method according to claim 71, wherein the barrier layer is formed by irradiating UV-rays in an atmosphere containing oxygen to generate ozone, thereby oxidizing a surface of the amorphous semiconductor film.

75. A method according to claim 71, wherein the barrier layer is a porous film formed with a film thickness of 1 to 10 nm.

76. A method according to claim 71, wherein the rare gas element is one kind or a plurality of kinds of elements selected from the group consisting of He, Ne, Ar, Kr, and Xe.

77. A method according to claim 71, wherein the first heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

78. A method according to claim 71, wherein the first heat treatment is conducted by using an electrothermal furnace.

79. A method according to claim 71, wherein the second heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

80. A method according to claim 71, wherein the second heat treatment is conducted by using an electrothermal furnace.

81. A method according to claim 71, wherein the catalytic element is one kind or a plurality of kinds of elements selected from the group consisting of Fe, Ni, Co, Ru, Rh, Pd, Os, Ir, Pt, Cu, and Au.

82. A method of manufacturing a semiconductor device, comprising the steps of:

forming an amorphous semiconductor film comprising silicon as a main component over an insulating surface;

adding a catalytic element for promoting crystallization to the amorphous semiconductor film;

forming a barrier layer over the amorphous semiconductor film;

forming a semiconductor film containing a rare gas element in a concentration of $1 \times 10^{19}/\text{cm}^3$ to $1 \times 10^{22}/\text{cm}^3$ over the barrier layer;

crystallizing the amorphous semiconductor film by a heat treatment to form a crystalline semiconductor film and moving the catalytic element to the semiconductor film containing the rare gas element;

removing the semiconductor film containing the rare gas element; and

irradiating the crystalline semiconductor film with laser light.

83. A method according to claim 82, wherein the barrier layer is a chemical oxide film formed by ozone water.

84. A method according to claim 82, wherein the barrier layer is formed by oxidizing a surface of the amorphous semiconductor film by a plasma treatment.

85. A method according to claim 82, wherein the barrier layer is formed by irradiating UV-rays in an atmosphere containing oxygen to generate ozone, thereby oxidizing a surface of the amorphous semiconductor film.

86. A method according to claim 82, wherein the barrier layer is a porous film formed with a film thickness of 1 to 10 nm.

87. A method according to claim 82, wherein the rare gas element is one kind or a plurality of kinds of elements selected from the group consisting of He, Ne, Ar, Kr, and Xe.

88. A method according to claim 82, wherein the first heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

89. A method according to claim 82, wherein the first heat treatment is conducted by using an electrothermal furnace.

90. A method according to claim 82, wherein the second heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

91. A method according to claim 82, wherein the second heat treatment is conducted by using an electrothermal furnace.

92. A method according to claim 82, wherein the catalytic element is one kind or a plurality of kinds of elements selected from the

group consisting of Fe, Ni, Co, Ru, Rh, Pd, Os, Ir, Pt, Cu, and Au.

93. A method of manufacturing a semiconductor device, comprising the steps of:

adding a catalytic element for promoting crystallization to an insulating surface;

forming an amorphous semiconductor film comprising silicon as a main component over the insulating surface;

forming a barrier layer over the amorphous semiconductor film;

forming a semiconductor film containing a rare gas element in a concentration of $1 \times 10^{19}/\text{cm}^3$ to $1 \times 10^{22}/\text{cm}^3$ over the amorphous semiconductor film;

crystallizing the amorphous semiconductor film by a heat treatment to form a crystalline semiconductor film and moving the catalytic element to the semiconductor film containing the rare gas element;

removing the semiconductor film containing the rare gas element; and

irradiating the crystalline semiconductor film with laser light.

94. A method according to claim 93, wherein the barrier layer is a chemical oxide film formed by ozone water.

95. A method according to claim 93, wherein the barrier layer is formed by oxidizing a surface of the amorphous semiconductor film by a plasma treatment.
96. A method according to claim 93, wherein the barrier layer is formed by irradiating UV-rays in an atmosphere containing oxygen to generate ozone, thereby oxidizing a surface of the amorphous semiconductor film.
97. A method according to claim 93, wherein the barrier layer is a porous film formed with a film thickness of 1 to 10 nm.
98. A method according to claim 93, wherein the rare gas element is one kind or a plurality of kinds of elements selected from the group consisting of He, Ne, Ar, Kr, and Xe.
99. A method according to claim 93, wherein the first heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.
100. A method according to claim 93, wherein the first heat treatment

is conducted by using an electrothermal furnace.

101. A method according to claim 93, wherein the second heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

102. A method according to claim 93, wherein the second heat treatment is conducted by using an electrothermal furnace.

103. A method according to claim 93, wherein the catalytic element is one kind or a plurality of kinds of elements selected from the group consisting of Fe, Ni, Co, Ru, Rh, Pd, Os, Ir, Pt, Cu, and Au.

104. A method of manufacturing a semiconductor device, comprising the steps of:

adding a catalytic element for promoting crystallization to an insulating surface;

forming an amorphous semiconductor film comprising silicon as a main component over the insulating surface;

forming a barrier layer over the amorphous semiconductor film;

forming a semiconductor film containing a rare gas element

in a concentration of $1 \times 10^{19}/\text{cm}^3$ to $1 \times 10^{22}/\text{cm}^3$ over the amorphous semiconductor film;

adding a rare gas element to the semiconductor film containing the rare gas element;

crystallizing the amorphous semiconductor film by a heat treatment to form a crystalline semiconductor film and moving the catalytic element to the semiconductor film containing the rare gas element;

removing the semiconductor film containing the rare gas element; and

irradiating the crystalline semiconductor film with laser light.

105. A method according to claim 104, wherein the barrier layer is a chemical oxide film formed by ozone water.

106. A method according to claim 104, wherein the barrier layer is formed by oxidizing a surface of the amorphous semiconductor film by a plasma treatment.

107. A method according to claim 104, wherein the barrier layer is formed by irradiating UV-rays in an atmosphere containing oxygen to generate ozone, thereby oxidizing a surface of the amorphous semiconductor film.

108. A method according to claim 104, wherein the barrier layer is a porous film formed with a film thickness of 1 to 10 nm.

109. A method according to claim 104, wherein the rare gas element is one kind or a plurality of kinds of elements selected from the group consisting of He, Ne, Ar, Kr, and Xe.

110. A method according to claim 104, wherein the first heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

111. A method according to claim 104, wherein the first heat treatment is conducted by using an electrothermal furnace.

112. A method according to claim 104, wherein the second heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

113. A method according to claim 104, wherein the second heat

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treatment is conducted by using an electrothermal furnace.

114. A method according to claim 104, wherein the catalytic element is one kind or a plurality of kinds of elements selected from the group consisting of Fe, Ni, Co, Ru, Rh, Pd, Os, Ir, Pt, Cu, and Au.

115. A method of manufacturing a semiconductor device, comprising:
forming a semiconductor layer over an insulating surface;
forming an insulating film over the semiconductor layer;
forming a first-shaped conductive layer over the insulating film;
forming a second-shaped conductive layer from the first-shaped conductive layer;
adding an impurity element of one conductivity to the semiconductor layer, using the second-shaped conductive layer as a mask, to form a first impurity region;
adding an impurity element of one conductivity to a selected region of the semiconductor layer, using the second-shaped conductive layer as a mask, to form second and third impurity regions;
and
adding an impurity element of conductivity opposite to the one conductivity to a selected region of the semiconductor layer, using the second-shaped conductive layer as a mask, to form fourth

and fifth impurity regions.

116. A method according to claim 115, wherein the impurity of one conductivity comprises an impurity imparting an n-type.

117. A method of manufacturing a semiconductor device, comprising:
forming a semiconductor layer over an insulating surface;
forming an insulating film over the semiconductor layer;
forming a first-shaped conductive layer over the insulating film;

forming a second-shaped conductive layer from the first-shaped conductive layer;

adding an impurity element of one conductivity to the semiconductor layer in a first dose amount, using the second-shaped conductive layer as a mask, to form a first impurity region;

adding an impurity element of one conductivity to a selected region of the semiconductor layer in a second dose amount, using the second-shaped conductive layer as a mask, to form second and third impurity regions; and

adding an impurity element of conductivity opposite to the one conductivity to a selected region of the semiconductor layer, using the second-shaped conductive layer as a mask, to form fourth and fifth impurity regions.

118. A method according to claim 117, wherein the impurity of one conductivity comprises an impurity imparting an n-type.

119. A method according to claim 49 wherein said semiconductor device is a personal computer.

120. A method according to claim 49 wherein said semiconductor device is a video camera.

121. A method according to claim 49 wherein said semiconductor device is a mobile computer.

122. A method according to claim 49 wherein said semiconductor device is a goggle type display.

123. A method according to claim 49 wherein said semiconductor device is a player using a record medium.

124. A method according to claim 49 wherein said semiconductor device is a digital camera.

125. A method according to claim 49 wherein said semiconductor device is a front type projector.

126. A method according to claim 49 wherein said semiconductor device is a rear type projector.

127. A method according to claim 49 wherein said semiconductor device is a portable telephone.

128. A method according to claim 49 wherein said semiconductor device is an electronic book.

129. A method according to claim 60 wherein said semiconductor device is a personal computer.

130. A method according to claim 60 wherein said semiconductor device is a video camera.

131. A method according to claim 60 wherein said semiconductor device is a mobile computer.

132. A method according to claim 60 wherein said semiconductor device is a goggle type display.

133. A method according to claim 60 wherein said semiconductor device is a player using a record medium.

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134. A method according to claim 60 wherein said semiconductor device is a digital camera.

135. A method according to claim 60 wherein said semiconductor device is a front type projector.

136. A method according to claim 60 wherein said semiconductor device is a rear type projector.

137. A method according to claim 60 wherein said semiconductor device is a portable telephone.

138. A method according to claim 60 wherein said semiconductor device is an electronic book.

139. A method according to claim 71 wherein said semiconductor device is a personal computer.

140. A method according to claim 71 wherein said semiconductor device is a video camera.

141. A method according to claim 71 wherein said semiconductor device is a mobile computer.

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142. A method according to claim 71 wherein said semiconductor device is a goggle type display.

143. A method according to claim 71 wherein said semiconductor device is a player using a record medium.

144. A method according to claim 71 wherein said semiconductor device is a digital camera.

145. A method according to claim 71 wherein said semiconductor device is a front type projector.

146. A method according to claim 71 wherein said semiconductor device is a rear type projector.

147. A method according to claim 71 wherein said semiconductor device is a portable telephone.

148. A method according to claim 71 wherein said semiconductor device is an electronic book.

149. A method according to claim 82 wherein said semiconductor device is a personal computer.

150. A method according to claim 82 wherein said semiconductor device is a video camera.

151. A method according to claim 82 wherein said semiconductor device is a mobile computer.

152. A method according to claim 82 wherein said semiconductor device is a goggle type display.

153. A method according to claim 82 wherein said semiconductor device is a player using a record medium.

154. A method according to claim 82 wherein said semiconductor device is a digital camera.

155. A method according to claim 82 wherein said semiconductor device is a front type projector.

156. A method according to claim 82 wherein said semiconductor device is a rear type projector.

157. A method according to claim 82 wherein said semiconductor device is a portable telephone.

158. A method according to claim 82 wherein said semiconductor device is an electronic book.

159. A method according to claim 93 wherein said semiconductor device is a personal computer.

160. A method according to claim 93 wherein said semiconductor device is a video camera.

161. A method according to claim 93 wherein said semiconductor device is a mobile computer.

162. A method according to claim 93 wherein said semiconductor device is a goggle type display.

163. A method according to claim 93 wherein said semiconductor device is a player using a record medium.

164. A method according to claim 93 wherein said semiconductor device is a digital camera.

165. A method according to claim 93 wherein said semiconductor device is a front type projector.

166. A method according to claim 93 wherein said semiconductor device is a rear type projector.

167. A method according to claim 93 wherein said semiconductor device is a portable telephone.

168. A method according to claim 93 wherein said semiconductor device is an electronic book.

169. A method according to claim 104 wherein said semiconductor device is a personal computer.

170. A method according to claim 104 wherein said semiconductor device is a video camera.

171. A method according to claim 104 wherein said semiconductor device is a mobile computer.

172. A method according to claim 104 wherein said semiconductor device is a goggle type display.

173. A method according to claim 104 wherein said semiconductor device is a player using a record medium.

174. A method according to claim 104 wherein said semiconductor device is a digital camera.

175. A method according to claim 104 wherein said semiconductor device is a front type projector.

176. A method according to claim 104 wherein said semiconductor device is a rear type projector.

177. A method according to claim 104 wherein said semiconductor device is a portable telephone.

178. A method according to claim 104 wherein said semiconductor device is an electronic book.

179. A method according to claim 115 wherein said semiconductor device is a personal computer.

180. A method according to claim 115 wherein said semiconductor device is a video camera.

181. A method according to claim 115 wherein said semiconductor device is a mobile computer.

182. A method according to claim 115 wherein said semiconductor device is a goggle type display.

183. A method according to claim 115 wherein said semiconductor device is a player using a record medium.

184. A method according to claim 115 wherein said semiconductor device is a digital camera.

185. A method according to claim 115 wherein said semiconductor device is a front type projector.

186. A method according to claim 115 wherein said semiconductor device is a rear type projector.

187. A method according to claim 115 wherein said semiconductor device is a portable telephone.

188. A method according to claim 115 wherein said semiconductor device is an electronic book.

189. A method according to claim 117 wherein said semiconductor device is a personal computer.

106-115-116-117-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-340-341-342-343-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393-394-395-396-397-398-399-400-401-402-403-404-405-406-407-408-409-410-411-412-413-414-415-416-417-418-419-420-421-422-423-424-425-426-427-428-429-430-431-432-433-434-435-436-437-438-439-440-441-442-443-444-445-446-447-448-449-450-451-452-453-454-455-456-457-458-459-460-461-462-463-464-465-466-467-468-469-470-471-472-473-474-475-476-477-478-479-480-481-482-483-484-485-486-487-488-489-490-491-492-493-494-495-496-497-498-499-500-501-502-503-504-505-506-507-508-509-510-511-512-513-514-515-516-517-518-519-520-521-522-523-524-525-526-527-528-529-530-531-532-533-534-535-536-537-538-539-540-541-542-543-544-545-546-547-548-549-550-551-552-553-554-555-556-557-558-559-560-561-562-563-564-565-566-567-568-569-570-571-572-573-574-575-576-577-578-579-580-581-582-583-584-585-586-587-588-589-590-591-592-593-594-595-596-597-598-599-600-601-602-603-604-605-606-607-608-609-610-611-612-613-614-615-616-617-618-619-620-621-622-623-624-625-626-627-628-629-630-631-632-633-634-635-636-637-638-639-640-641-642-643-644-645-646-647-648-649-650-651-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-668-669-670-671-672-673-674-675-676-677-678-679-680-681-682-683-684-685-686-687-688-689-690-691-692-693-694-695-696-697-698-699-700-701-702-703-704-705-706-707-708-709-710-711-712-713-714-715-716-717-718-719-720-721-722-723-724-725-726-727-728-729-730-731-732-733-734-735-736-737-738-739-740-741-742-743-744-745-746-747-748-749-750-751-752-753-754-755-756-757-758-759-760-761-762-763-764-765-766-767-768-769-770-771-772-773-774-775-776-777-778-779-780-781-782-783-784-785-786-787-788-789-790-791-792-793-794-795-796-797-798-799-800-801-802-803-804-805-806-807-808-809-810-811-812-813-814-815-816-817-818-819-820-821-822-823-824-825-826-827-828-829-830-831-832-833-834-835-836-837-838-839-840-841-842-843-844-845-846-847-848-849-850-851-852-853-854-855-856-857-858-859-860-861-862-863-864-865-866-867-868-869-870-871-872-873-874-875-876-877-878-879-880-881-882-883-884-885-886-887-888-889-890-891-892-893-894-895-896-897-898-899-900-901-902-903-904-905-906-907-908-909-910-911-912-913-914-915-916-917-918-919-920-921-922-923-924-925-926-927-928-929-930-931-932-933-934-935-936-937-938-939-940-941-942-943-944-945-946-947-948-949-950-951-952-953-954-955-956-957-958-959-960-961-962-963-964-965-966-967-968-969-970-971-972-973-974-975-976-977-978-979-980-981-982-983-984-985-986-987-988-989-990-991-992-993-994-995-996-997-998-999-1000

190. A method according to claim 117 wherein said semiconductor device is a video camera.

191. A method according to claim 117 wherein said semiconductor device is a mobile computer.

192. A method according to claim 117 wherein said semiconductor device is a goggle type display.

193. A method according to claim 117 wherein said semiconductor device is a player using a record medium.

194. A method according to claim 117 wherein said semiconductor device is a digital camera.

195. A method according to claim 117 wherein said semiconductor device is a front type projector.

196. A method according to claim 117 wherein said semiconductor device is a rear type projector.

197. A method according to claim 117 wherein said semiconductor device is a portable telephone.

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198. A method according to claim 117 wherein said semiconductor device is an electronic book.

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